REMARKS

Claims 1-21 are present in this application. Claims 1, 15, 18, and 19 are independent.

Information Disclosure Statement

Applicants thank the Examiner for providing initialed PTO-1449's for IDS's submitted June 19, 2001 and March 10, 2005. However, a non-patent reference was not initialed on the PTO-1449 of June 19, 2001. Applicants request consideration of the non-patent reference, Takizuka et al., and an initialed PTO-1449 for the IDS of June 19, 2001 showing consideration of the same.

Allowable Subject Matter

Applicants thank the Examiner for indicating that claims 13, 14, 16, 17, 20, and 21 are allowable.

Claim Rejection – 35 USC § 102(e); Strum

Claims 1-12, 15, 18, and 19 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,581,114 (Sturm).

Claim 1 is directed to a transmission method capable of transmitting and receiving a data signal and an information signal among a plurality of devices by full-duplex operation. The transmission method is such that when the information signal consecutively repeats a single pattern, a different pattern is inserted between the same patterns before transmitting the single patterns.

As disclosed in the present application, an example of a repeating pattern is when a serial bus enters an idling state, and IDLE code is repeatedly transmitted for the period of time that there is no communication over the bus. Applicants have found that during such a condition, because the ports for respective communicating devices have a comparable clock speed, the continuous transmission of a periodic waveform from both ports results in unbalanced jitter (paragraph bridging pages 9 and 10).

Thus, in embodiments of the present invention when an information signal contains a consecutively repeated signal pattern, a different pattern is inserted between the same patterns before transmitting the single patterns.

The Office Action relies on Sturm, and in particular the description of Fig. 2, for teaching the claimed invention (column 4, line 36, to column 5, line 11). The Office Action appears to indicate that the "comma code-group" 8b10b code (a 10 bit data word) constitutes the claimed "different pattern" that would allegedly be inserted into a single 8b10b code, constituting the claimed consecutively repeated single pattern.

Strum

Sturm is directed to a method of synchronizing serial data (Field of the Invention). Sturms' method uses 8b10b encoding. The communications system sends either data or special codes in multiples of code-groups, or packets. When data is sent, the receiver characterizes the received code-groups as belonging to either the set of data code-groups or the set of special code-groups. The receiver supplies a data-valid signal indicating whether the received data was in the

set of data code-groups, or special code groups, as well as an error signal. If the receiver loses word synchronization, the transmitter will send an 8b10b comma code-group to the B side receiver. The receiver will recognize the comma code and use it to re-align its word boundaries correctly. (section at column 4, line 36, to column 5, line 11).

Differences over Strum

In the description of Fig. 2, Sturm states that Fig. 2 shows a simple view of a communication system that uses full duplex serial data with 8b10b encoding. The description states that the system can send either data, using data-code groups, or special codes such as idle code, as an idle pattern (col. 4, lines 47-51). Although the section does appear to disclose sending of data-code groups from the 8b10b code, Strum does not appear to disclose that a 8b10b code or the data code-groups are consecutively repeating single patterns, and does not appear to disclose that a "comma code-group" would be inserted between consecutively repeated data code-groups or 8b10b code words, i.e. same patterns of the single patterns, before transmitting the code words.

Embodiments of the present invention insert a different pattern between same patterns "before transmitting the single patterns" in order to avoid problems such as occurrence of crosstalk in waveform signals. Sturms' "comma code-group" is sent by the transmitter after the receiver receives code-groups missing a word in a packet, or are sent occasionally to maintain word synchronization, and thus are not inserted between same patterns to prevent crosstalk in

transmitted signals. The claimed invention specifically requires insertion of the different pattern "when the information signal consecutively repeats a single pattern."

Thus, Applicants submit that Sturm fails to teach at least the claimed information waveform signals that consecutively repeat a single pattern, and insertion of a different pattern between same patterns before transmitting the single patterns.

Furthermore, Sturm is directed to synchronization in serial data at the binary coded level (e.g., 8b10b code is a 10 bit data word). Strum does not appear to address the problem of crosstalk jitter, which results from interfering periodic waveforms (e.g., radio waves or light waves) transmitting at a similar clock speed. In order to clarify that the claimed invention is directed to a solution of problems related to transmission of either radio wave signals or light wave signals, the claims have been amended to recite "data waveform signal" and "periodic information waveform signal". For example, claim 1 has been amended to clarify that the transmitted information waveform signal has a different pattern inserted between same patterns.

Applicants submit that Strum does not teach or suggest at least this aspect of the claimed invention.

Further with respect to claim 15, the Office Action states that claim 15 is similar to claim 1 and indicates that a section of Strum at column 3, lines 51-63, teaches that 8b10b codes include '0' and '1' bits, wherein when a single pattern of 8b10b code is used, comma codes are inserted randomly.

In an embodiment of the present invention, the same patterns and different pattern are a reverse complement of 1's and 0's of each other. For example, a same pattern "0011111010" would have a complementary reverse different pattern "1100000101". (Fig. 11).

Strum's "comma codes" are not disclosed as being a code including a reverse of '1' and '0' corresponding to a single type of information, but rather are a word, not part of the user code space, which has a run of five ones or five zeros. Thus, at least because of this additional difference, Applicants submit that Strum fails to teach each and every element of claim 15.

As each of the independent claims 1, 15, 18, and 19 have been amended, Applicants request that the rejection be reconsidered and withdrawn.

Claim Rejection – 35 U.S.C. § 103(a); Strum

Claim 19 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Strum.

Claim 19 recites, among other things, a comparable limitation of claim 1 of "when the identification signal is the information signal and consecutively repeats a single pattern, transmits the information signal after inserting a random pattern generated by the random pattern generating section into the information signal." Accordingly, Applicants submit that at least for the reasons above for claim 1, claim 19 is patentable over Strum. Applicants request that the rejection be reconsidered and withdrawn.

Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert W. Downs (Reg. No. 48,222) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By _____

RWD

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